MULTIMEDIA UNIVERSITY

STUDENT IDENTIFICATION NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2018/2019

BSE2414 – SOFTWARE ENGINEERING FUNDAMENTALS

(All Section / Groups)

11 MARCH 2019
2.30 p.m. – 4.30 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This Question paper consists of 5 pages with 4 Questions only (including cover page).
2. Attempt **ALL FOUR** questions.
3. The distribution of the marks for each question is given.
4. Please write all your answers in the Answer Booklet provided.

Attempt **ALL FOUR** questions.

QUESTION 1

Based on the scenario given below, answer the following questions.

The death toll from a volcano-triggered tsunami has reach at least 281 people and 1,016 were injured after the tsunami hit coastal towns onto Indonesia's Sunda Strait, government officials say. There was no warning of the giant waves which struck at night, destroying hundreds of buildings, sweeping away cars and uprooting trees. It was thought that undersea landslides from the Anak Krakatau volcano caused them. Indonesian rescuers are scrambling with diggers and other heavy equipment and even their bare hands, trying to free survivors from the rubble. More than 600 homes and more than 400 boats and ships were damaged. To trace all these records, you need to produce a system to record all the victims' personal information including their lost during the tsunami. The system is going to base on the idea of developing an initial implementation, getting feedback from the victims and evolving the software through several versions until the required use cases of the system is fully developed. Basically, each increment or version of the system incorporates some of the functionality that is needed by victim.

a) Select the most appropriate general software process model that might be used as a basis for managing the development of the system mentioned above. Justify your answer. **(5 marks)**

b) Explain **THREE (3)** benefits of the model suggested in (a). **(9 marks)**

c) If the same system is well planned with very clear systems requirements where it has to accommodate all of the victims' feedback, which software process model do you think is best to develop this system. Justify your answer. **(5 marks)**

d) Explain **TWO (2)** problems of the model suggested in (c). **(6 marks)**

(Total 25 marks)

Continued...

QUESTION 2

Using the information in table given below, assuming that the project team will work a standard working week (5 working days in 1 week) and that all tasks will start as soon as possible.

Task	Description	Duration (days)	Dependencies
A	Requirement Analysis	5 days	----
B	Systems Design	15 days	A
C	Programming	25 days	B
D	Telecoms	15 days	B
E	Hardware Installation	30 days	B
F	Integration	10 days	C,D
G	System Testing	10 days	E,F
H	Training/Support	5 days	G
I	Handover and Go-Live	5 days	H

a) List down **FOUR (4)** processes in project scheduling after identifying the activities. Discuss each process briefly. **(6 marks)**

b) Draw an activity network diagram. **(10 marks)**

c) Determine the critical path of the project in number of days and also weeks. Show the method of working. **(9 marks)**

(Total 25 marks)

QUESTION 3

a) To minimize misunderstandings when writing natural language requirements, a simple guideline has to be followed. List down any **FIVE (5)** simple guidelines. **(10 marks)**

b) Explain any **TWO (2)** problems of writing requirements with natural language. **(5 marks)**

Continued...

c) Draw a use case diagram based on the scenario given below.

In order to enter into MMLS at Multimedia University, students and lecturers need to login into the system. Lectures need to upload the teaching & learning materials into MMLS and students need to download the teaching & learning materials. Besides that, lecturers also could upload any announcements pertaining the subject or class matters. They also could upload any tutorials or assignment questions related to subject. Students are able to view all the announcements posted. They also have to attempt the tutorials or assignments posted and submit their work to lecturers via MMLS. Then lecturer get to mark the tutorials and assignments and submit their feedback to students via MMLS. Last, lecturers and students need to log out from MMLS to avoid any unauthorized users from accessing the MMLS.

(10 marks)

(Total 25 marks)

QUESTION 4

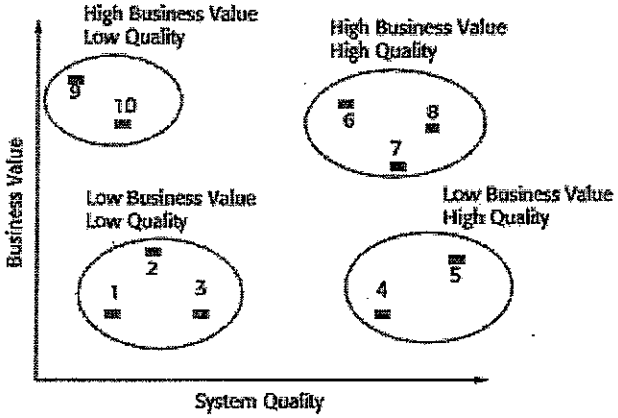
Based on the scenario given below, answer the following questions.

A legacy system, in the context of computing, refers to outdated computer systems, programming languages or application software that are used instead of available upgraded versions. Legacy systems also may be associated with terminology or processes that are no longer applicable to current contexts or content, thus creating confusion. In theory, it would be great to be able to have immediate access to use the most advanced technology. But in reality, most organizations have legacy systems - to some extent. A legacy system may be problematic, due to compatibility issues, obsoletion or lack of security support. Legacy systems are socio-technical computer-based systems that have been developed in the past, often using older or obsolete technology. These systems include not only hardware and software but also legacy processes and procedures—old ways of doing things that are difficult to change because they rely on legacy software. Changes to one part of the system inevitably involve changes to other components, Legacy systems are often business-critical systems. They are maintained because it is too risky to replace them. For example, for most banks the customer accounting system was one of their earliest systems. Organisational policies and procedures may rely on this system. If the bank were to scrap and replace the customer accounting software (which may run on expensive mainframe hardware) then there would be a serious business risk if the replacement system didn't work properly. Furthermore, existing procedures would have to change, and this may upset the people in the organisation and cause difficulties with the bank's auditors. They have to decide on how to get the best return on their investment.

a) In order to get the best return on their investment, they have to decide on the most appropriate strategy for evolving these systems. Explain all **FOUR (4)** strategic options. **(16 marks)**

b) When you are assessing a legacy system, you have to look at it from a business perspective and a technical perspective as the figure given below to assess the quality and the business value of each of these systems. Explain any **THREE (3)** of the clusters based on the figure in assessing the legacy system.

(9 marks)



(Total 25 marks)

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